MODULE II
Appendix

Contents

What Is A Depressive Disorder?

A depressive disorder is an illness that involves the body, mood, and thoughts. It affects the way a person eats and sleeps, the way one feels about oneself, and the way one thinks about things. A depressive disorder is not the same as a passing blue mood. It is not a sign of personal weakness or a condition that can be willed or wished away. People with a depressive illness cannot merely "pull themselves together" and get better. Without treatment, symptoms can last for weeks, months, or years. Appropriate treatment, however, can help most people who suffer from depression.

TYPES OF DEPRESSION

Depressive disorders come in different forms, just as is the case with other illnesses such as heart disease. This pamphlet briefly describes three of the most common types of depressive disorders. However, within these types there are variations in the number of symptoms, their severity, and persistence.

Major depression is manifested by a combination of symptoms (see symptom list) that interfere with the ability to work, study, sleep, eat, and enjoy once pleasurable activities. Such a disabling episode of depression may occur only once but more commonly occurs several times in a lifetime.

A less severe type of depression, dysthymia, involves long-term, chronic symptoms that do not disable, but keep one from functioning well or from feeling good. Many people with dysthymia also experience major depressive episodes at some time in their lives.

Another type of depression is bipolar disorder, also called manic-depressive illness. Not nearly as prevalent as other forms of depressive disorders, bipolar disorder is characterized by cycling mood changes: severe highs (mania) and lows (depression). Sometimes the mood switches are dramatic and rapid, but most often they are gradual. When in the depressed cycle, an individual can have any or all of the symptoms of a depressive disorder. When in the manic cycle, the individual may be overactive, overtalkative, and have a great deal of energy. Mania often affects thinking, judgment, and social behavior in ways that cause serious problems and embarrassment. For example, the individual in a manic phase may feel elated, full of grand schemes that might range from unwise business decisions to romantic sprees. Mania, left untreated, may worsen to a psychotic state.

SYMPTOMS OF DEPRESSION AND MANIA

Not everyone who is depressed or manic experiences every symptom. Some people experience a few symptoms, some many. Severity of symptoms varies with individuals and also varies over time.

Depression

- **Persistent sad, anxious, or "empty" mood**
- **Feelings of hopelessness, pessimism**
- **Feelings of guilt, worthlessness, helplessness**
- **Loss of interest or pleasure in hobbies and activities that were once enjoyed, including sex**
- **Decreased energy, fatigue, being "slowed down"**
- **Difficulty concentrating, remembering, making decisions**
- **Insomnia, early-morning awakening, or oversleeping**
- **Appetite and/or weight loss or overeating and weight gain**
- **Thoughts of death or suicide; suicide attempts**
- **Restlessness, irritability**
- **Persistent physical symptoms that do not respond to treatment, such as headaches, digestive disorders, and chronic pain**

Mania

- **Abnormal or excessive elation**
- **Unusual irritability**
- **Decreased need for sleep**
- **Grandiose notions**
- **Increased talking**
- **Racing thoughts**
- **Increased sexual desire**
- **Markedly increased energy**
- **Poor judgment**
- **Inappropriate social behavior**

CAUSES OF DEPRESSION

Some types of depression run in families, suggesting that a biological vulnerability can be inherited. This seems to be the case with bipolar disorder. Studies of families in which members of each generation develop bipolar disorder found that those with the illness have a somewhat different genetic makeup than those who do not get ill. However, the reverse is not true: Not everybody with the genetic makeup that causes vulnerability to bipolar disorder will have the illness. Apparently additional factors, possibly stresses at home, work, or school, are involved in its onset.

In some families, major depression also seems to occur generation after generation. However, it can also occur in people who have no family history of depression. Whether inherited or not, major depressive disorder is often associated with changes in brain structures or brain function.

People who have low self-esteem, who consistently view themselves and the world with pessimism or who are readily overwhelmed by stress, are prone to depression. Whether this represents a psychological predisposition or an early form of the illness is not clear.

In recent years, researchers have shown that physical changes in the body can be accompanied by mental changes as well. Medical illnesses such as stroke, a heart attack, cancer, Parkinson's disease, and hormonal disorders can cause depressive illness, making the sick person apathetic and unwilling to care for his or her physical needs, thus prolonging the recovery period. Also, a serious loss, difficult relationship, financial problem, or any stressful (unwelcome or even desired) change in life patterns can trigger a depressive episode. Very often, a combination of genetic, psychological, and environmental factors is involved in the onset of a depressive disorder. Later episodes of illness typically are precipitated by only mild stresses, or none at all.

Depression in Women

Women experience depression about twice as often as men.[1] Many hormonal factors may contribute to the increased rate of depression in women—particularly such factors as menstrual cycle changes, pregnancy, miscarriage, postpartum period, pre-menopause, and menopause. Many women also face additional stresses such as responsibilities both at work and home, single parenthood, and caring for children and for aging parents.

A recent NIMH study showed that in the case of severe premenstrual syndrome (PMS), women with a preexisting vulnerability to PMS experienced relief from mood and physical symptoms when their sex hormones were suppressed. Shortly after the hormones were re-introduced, they again developed symptoms of PMS. Women without a history of PMS reported no effects of the hormonal manipulation.[6,7]

Many women are also particularly vulnerable after the birth of a baby. The hormonal and physical changes, as well as the added responsibility of a new life, can be factors that lead to postpartum depression in some women. While transient "blues" are common in new mothers, a full-blown depressive episode is not a normal occurrence and requires active intervention. Treatment by a sympathetic physician and the family's emotional support for the new mother are prime considerations in aiding her to recover her physical and mental well-being and her ability to care for and enjoy the infant.

Depression in Men

Although men are less likely to suffer from depression than women, 3 to 4 million men in the United States are affected by the illness. Men are less likely to admit to depression, and doctors are less likely to suspect it. The rate of suicide in men is four times that of women, though more women attempt it. In fact, after age 70, the rate of men's suicide rises, reaching a peak after age 85.

Depression can also affect the physical health in men differently from women. A new study shows that, although depression is associated with an increased risk of coronary heart disease in both men and women, only men suffer a high death rate.[2]

Men's depression is often masked by alcohol or drugs, or by the socially acceptable habit of working excessively long hours. Depression typically shows up in men not as feeling hopeless and helpless, but as being irritable, angry, and discouraged; hence, depression may be difficult to recognize as such in men. Even if a man realizes that he is depressed, he may be less willing than a woman to seek help. Encouragement and support from concerned family members can make a difference. In the workplace, employee assistance professionals or worksite mental health programs can be of assistance in helping men understand and accept depression as a real illness that needs treatment.

Depression in the Elderly

Some people have the mistaken idea that it is normal for the elderly to feel depressed. On the contrary, most older people feel satisfied with their lives. Sometimes, though, when depression develops, it may be dismissed as a normal part of aging. Depression in the elderly, undiagnosed and untreated, causes needless suffering for the family and for the individual who could otherwise live a fruitful life. When he or she does go to the doctor, the symptoms described are usually physical, for the older person is often reluctant to discuss feelings of hopelessness, sadness, loss of interest in normally pleasurable activities, or extremely prolonged grief after a loss.

Recognizing how depressive symptoms in older people are often missed, many health care professionals are learning to identify and treat the underlying depression. They recognize that some symptoms may be side effects of medication the older person is taking for a physical problem, or they may be caused by a co-occurring illness. If a diagnosis of depression is made, treatment with medication and/or psychotherapy will help the depressed person return to a happier, more fulfilling life. Recent research suggests that brief psychotherapy (talk therapies that help a person in day-to-day relationships or in learning to counter the distorted negative thinking that commonly accompanies depression) is effective in reducing symptoms in short-term

depression in older persons who are medically ill. Psychotherapy is also useful in older patients who cannot or will not take medication. Efficacy studies show that late-life depression can be treated with psychotherapy.[4] Improved recognition and treatment of depression in late life will make those years more enjoyable and fulfilling for the depressed elderly person, the family, and caretakers.

Depression in Children

Only in the past two decades has depression in children been taken very seriously. The depressed child may pretend to be sick, refuse to go to school, cling to a parent, or worry that the parent may die. Older children may sulk, get into trouble at school, be negative, grouchy, and feel misunderstood. Because normal behaviors vary from one childhood stage to another, it can be difficult to tell whether a child is just going through a temporary "phase" or is suffering from depression. Sometimes the parents become worried about how the child's behavior has changed, or a teacher mentions that "your child doesn't seem to be himself." In such a case, if a visit to the child's pediatrician rules out physical symptoms, the doctor will probably suggest that the child be evaluated, preferably by a psychiatrist who specializes in the treatment of children. If treatment is needed, the doctor may suggest that another therapist, usually a social worker or a psychologist, provide therapy while the psychiatrist will oversee medication if it is needed. Parents should not be afraid to ask questions: What are the therapist's qualifications? What kind of therapy will the child have? Will the family as a whole participate in therapy? Will my child's therapy include an antidepressant? If so, what might the side effects be?

The National Institute of Mental Health (NIMH) has identified the use of medications for depression in children as an important area for research. The NIMH-supported Research Units on Pediatric Psychopharmacology (RUPPs) form a network of seven research sites where clinical studies on the effects of medications for mental disorders can be conducted in children and adolescents. Among the medications being studied are antidepressants, some of which have been found to be effective in treating children with depression, if properly monitored by the child's physician.[8]

DIAGNOSTIC EVALUATION AND TREATMENT

The first step to getting appropriate treatment for depression is a physical examination by a physician. Certain medications as well as some medical conditions such as a viral infection can cause the same symptoms as depression, and the physician should rule out these possibilities through examination, interview, and lab tests. If a physical cause for the depression is ruled out, a psychological evaluation should be done, by the physician or by referral to a psychiatrist or psychologist.

A good diagnostic evaluation will include a complete history of symptoms, i.e., when they started, how long they have lasted, how severe they are, whether the patient had them before and, if so, whether the symptoms were treated and what treatment was given. The doctor should ask about alcohol and drug use, and if the patient has thoughts about death or suicide. Further, a history should include questions about whether other family members have had a depressive illness and, if treated, what treatments they may have received and which were effective.

Last, a diagnostic evaluation should include a mental status examination to determine if speech or thought patterns or memory have been affected, as sometimes happens in the case of a depressive or manic-depressive illness.

Treatment choice will depend on the outcome of the evaluation. There are a variety of antidepressant medications and psychotherapies that can be used to treat depressive disorders. Some people with milder forms may do well with psychotherapy alone. People with moderate to severe depression most often benefit from antidepressants. Most do best with combined treatment: medication to gain relatively quick symptom relief and psychotherapy to learn more effective ways to deal with life's problems, including depression. Depending on the patient's diagnosis and severity of symptoms, the therapist may prescribe medication and/or one of the several forms of psychotherapy that have proven effective for depression.

Electroconvulsive therapy (ECT) is useful, particularly for individuals whose depression is severe or life threatening or who cannot take antidepressant medication.[3] ECT often is effective in cases where antidepressant medications do not provide sufficient relief of symptoms. In recent years, ECT has been much improved. A muscle relaxant is given before treatment, which is done under brief anesthesia. Electrodes are placed at precise locations on the head to deliver electrical impulses. The stimulation causes a brief (about 30 seconds) seizure within the brain. The person receiving ECT does not consciously experience the electrical stimulus. For full therapeutic benefit, at least several sessions of ECT, typically given at the rate of three per week, are required.

Medications

There are several types of antidepressant medications used to treat depressive disorders. These include newer medications—chiefly the selective serotonin reuptake inhibitors (SSRIs)—the tricyclics, and the monoamine oxidase inhibitors (MAOIs). The SSRIs—and other newer medications that affect neurotransmitters such as dopamine or norepinephrine—generally have fewer side effects than tricyclics. Sometimes the doctor will try a variety of antidepressants before finding the most effective medication or combination of

medications. Sometimes the dosage must be increased to be effective. Although some improvements may be seen in the first few weeks, antidepressant medications must be taken regularly for 3 to 4 weeks (in some cases, as many as 8 weeks) before the full therapeutic effect occurs.

Patients often are tempted to stop medication too soon. They may feel better and think they no longer need the medication. Or they may think the medication isn't helping at all. It is important to keep taking medication until it has a chance to work, though side effects (see section on Side Effects on page 13) may appear before antidepressant activity does. Once the individual is feeling better, it is important to continue the medication for at least 4 to 9 months to prevent a recurrence of the depression. *Some medications must be stopped gradually to give the body time to adjust.* ***Never*** *stop taking an antidepressant without consulting the doctor for instructions on how to safely discontinue the medication.* For individuals with bipolar disorder or chronic major depression, medication may have to be maintained indefinitely.

Antidepressant drugs are not habit-forming. However, as is the case with any type of medication prescribed for more than a few days, antidepressants have to be carefully monitored to see if the correct dosage is being given. The doctor will check the dosage and its effectiveness regularly.

For the small number of people for whom MAO inhibitors are the best treatment, it is necessary to avoid certain foods that contain high levels of tyramine, such as many cheeses, wines, and pickles, as well as medications such as decongestants. The interaction of tyramine with MAOIs can bring on a hypertensive crisis, a sharp increase in blood pressure that can lead to a stroke. The doctor should furnish a complete list of prohibited foods that the patient should carry at all times. Other forms of antidepressants require no food restrictions.

Medications of any kind—prescribed, over-the counter, or borrowed—should never be mixed without consulting the doctor. Other health professionals who may prescribe a drug—such as a dentist or other medical specialist—should be told of the medications the patient is taking. Some drugs, although safe when taken alone can, if taken with others, cause severe and dangerous side effects. Some drugs, like alcohol or street drugs, may reduce the effectiveness of antidepressants and should be avoided. This includes wine, beer, and hard liquor. Some people who have not had a problem with alcohol use may be permitted by their doctor to use a modest amount of alcohol while taking one of the newer antidepressants.

Antianxiety drugs or sedatives are not antidepressants. They are sometimes prescribed along with antidepressants; however, they are not effective when

taken alone for a depressive disorder. Stimulants, such as amphetamines, are not effective antidepressants, but they are used occasionally under close supervision in medically ill depressed patients.

Questions about any antidepressant prescribed, or problems that may be related to the medication, should be discussed with the doctor.

Lithium has for many years been the treatment of choice for bipolar disorder, as it can be effective in smoothing out the mood swings common to this disorder. Its use must be carefully monitored, as the range between an effective dose and a toxic one is small. If a person has preexisting thyroid, kidney, or heart disorders or epilepsy, lithium may not be recommended. Fortunately, other medications have been found to be of benefit in controlling mood swings. Among these are two mood-stabilizing anticonvulsants, carbamazepine (Tegretol®) and valproate (Depakote®). Both of these medications have gained wide acceptance in clinical practice, and valproate has been approved by the Food and Drug Administration for first-line treatment of acute mania. Other anticonvulsants that are being used now include lamotrigine (Lamictal®) and gabapentin (Neurontin®): their role in the treatment hierarchy of bipolar disorder remains under study.

Most people who have bipolar disorder take more than one medication including, along with lithium and/or an anticonvulsant, a medication for accompanying agitation, anxiety, depression, or insomnia. Finding the best possible combination of these medications is of utmost importance to the patient and requires close monitoring by the physician.

Side Effects

Antidepressants may cause mild and, usually, temporary side effects (sometimes referred to as adverse effects) in some people. Typically these are annoying, but not serious. However, any unusual reactions or side effects or those that interfere with functioning should be reported to the doctor immediately. The most common side effects of tricyclic antidepressants, and ways to deal with them, are:

- **Dry mouth**—it is helpful to drink sips of water; chew sugarless gum; clean teeth daily.
- **Constipation**—bran cereals, prunes, fruit, and vegetables should be in the diet.
- **Bladder problems**—emptying the bladder may be troublesome, and the urine stream may not be as strong as usual; the doctor should be notified if there is marked difficulty or pain.
- **Sexual problems**—sexual functioning may change; if worrisome, it

should be discussed with the doctor.

- **Blurred vision**—this will pass soon and will not usually necessitate new glasses.
- **Dizziness**—rising from the bed or chair slowly is helpful.
- **Drowsiness as a daytime problem**—this usually passes soon. A person feeling drowsy or sedated should not drive or operate heavy equipment. The more sedating antidepressants are generally taken at bedtime to help sleep and minimize daytime drowsiness.

The newer antidepressants have different types of side effects:

- **Headache**—this will usually go away.
- **Nausea**—this is also temporary, but even when it occurs, it is transient after each dose.
- **Nervousness and insomnia (trouble falling asleep or waking often during the night)**—these may occur during the first few weeks; dosage reductions or time will usually resolve them.
- **Agitation (feeling jittery)**—if this happens for the first time after the drug is taken and is more than transient, the doctor should be notified.
- **Sexual problems**—the doctor should be consulted if the problem is persistent or worrisome.

Herbal Therapy

In the past few years, much interest has risen in the use of herbs in the treatment of both depression and anxiety. St. John's wort (*Hypericum perforatum*), an herb used extensively in the treatment of mild to moderate depression in Europe, has recently aroused interest in the United States. St. John's wort, an attractive bushy, low-growing plant covered with yellow flowers in summer, has been used for centuries in many folk and herbal remedies. Today in Germany, Hypericum is used in the treatment of depression more than any other antidepressant. However, the scientific studies that have been conducted on its use have been short-term and have used several different doses.

Because of the widespread interest in St. John's wort, the National Institutes of Health (NIH) conducted a 3-year study, sponsored by three NIH components—the National Institute of Mental Health, the National Center for Complementary and Alternative Medicine, and the Office of Dietary Supplements. The study was designed to include 336 patients with major depression of moderate severity, randomly assigned to an 8-week trial with one-third of patients receiving a uniform dose of St. John's wort, another third sertraline, a selective serotonin reuptake inhibitor (SSRI) commonly prescribed for depression, and the final third a placebo (a pill that looks exactly like the SSRI and the St. John's wort, but has no active ingredients). The study participants who responded positively were

followed for an additional 18 weeks. At the end of the first phase of the study, participants were measured on two scales, one for depression and one for overall functioning. There was no significant difference in rate of response for depression, but the scale for overall functioning was better for the antidepressant than for either St. John's wort or placebo. While this study did not support the use of St. John's wort in the treatment of major depression, ongoing NIH-supported research is examining a possible role for St. John's wort in the treatment of milder forms of depression.

The Food and Drug Administration issued a Public Health Advisory on February 10, 2000. It stated that St. John's wort appears to affect an important metabolic pathway that is used by many drugs prescribed to treat conditions such as AIDS, heart disease, depression, seizures, certain cancers, and rejection of transplants. Therefore, health care providers should alert their patients about these potential drug interactions.

Some other herbal supplements frequently used that have not been evaluated in large-scale clinical trials are ephedra, gingko biloba, echinacea, and ginseng. Any herbal supplement should be taken only after consultation with the doctor or other health care provider.

PSYCHOTHERAPIES

Many forms of psychotherapy, including some short-term (10-20 week) therapies, can help depressed individuals. "Talking" therapies help patients gain insight into and resolve their problems through verbal exchange with the therapist, sometimes combined with "homework" assignments between sessions. "Behavioral" therapists help patients learn how to obtain more satisfaction and rewards through their own actions and how to unlearn the behavioral patterns that contribute to or result from their depression.

Two of the short-term psychotherapies that research has shown helpful for some forms of depression are interpersonal and cognitive/behavioral therapies. Interpersonal therapists focus on the patient's disturbed personal relationships that both cause and exacerbate (or increase) the depression. Cognitive/behavioral therapists help patients change the negative styles of thinking and behaving often associated with depression.

Psychodynamic therapies, which are sometimes used to treat depressed persons, focus on resolving the patient's conflicted feelings. These therapies are often reserved until the depressive symptoms are significantly improved. In general, severe depressive illnesses, particularly those that are recurrent, will require medication (or ECT under special conditions) along with, or preceding, psychotherapy for the best outcome.

HOW TO HELP YOURSELF IF YOU ARE DEPRESSED

Depressive disorders make one feel exhausted, worthless, helpless, and hopeless. Such negative thoughts and feelings make some people feel like giving up. It is important to realize that these negative views are part of the depression and typically do not accurately reflect the actual circumstances. Negative thinking fades as treatment begins to take effect. In the meantime:

- **Set realistic goals in light of the depression and assume a reasonable amount of responsibility.**
- **Break large tasks into small ones, set some priorities, and do what you can as you can.**
- **Try to be with other people and to confide in someone; it is usually better than being alone and secretive.**
- **Participate in activities that may make you feel better.**
- **Mild exercise, going to a movie, a ballgame, or participating in religious, social, or other activities may help.**
- **Expect your mood to improve gradually, not immediately. Feeling better takes time.**
- **It is advisable to postpone important decisions until the depression has lifted. Before deciding to make a significant transition—change jobs, get married or divorced—discuss it with others who know you well and have a more objective view of your situation.**
- **People rarely "snap out of" a depression. But they can feel a little better day-by-day.**
- ***Remember*, positive thinking will replace the negative thinking that is part of the depression and will disappear as your depression responds to treatment.**
- **Let your family and friends help you.**

How Family and Friends Can Help the Depressed Person

The most important thing anyone can do for the depressed person is to help him or her get an appropriate diagnosis and treatment. This may involve encouraging the individual to stay with treatment until symptoms begin to abate (several weeks), or to seek different treatment if no improvement occurs. On occasion, it may require making an appointment and accompanying the depressed person to the doctor. It may also mean monitoring whether the depressed person is taking medication. The depressed person should be encouraged to obey the doctor's orders about the use of alcoholic products while on medication. The second most important thing is to offer emotional support. This involves understanding, patience, affection, and encouragement. Engage the depressed person in conversation and listen carefully. Do not disparage feelings expressed, but point out realities and offer hope. Do not ignore remarks

about suicide. Report them to the depressed person's therapist. Invite the depressed person for walks, outings, to the movies, and other activities. Be gently insistent if your invitation is refused. Encourage participation in some activities that once gave pleasure, such as hobbies, sports, religious or cultural activities, but do not push the depressed person to undertake too much too soon. The depressed person needs diversion and company, but too many demands can increase feelings of failure.

Do not accuse the depressed person of faking illness or of laziness, or expect him or her "to snap out of it." Eventually, with treatment, most people do get better. Keep that in mind, and keep reassuring the depressed person that, with time and help, he or she will feel better.

WHERE TO GET HELP

If unsure where to go for help, check the Yellow Pages under "mental health," "health," "social services," "suicide prevention," "crisis intervention services," "hotlines," "hospitals," or "physicians" for phone numbers and addresses. In times of crisis, the emergency room doctor at a hospital may be able to provide temporary help for an emotional problem, and will be able to tell you where and how to get further help.

Listed below are the types of people and places that will make a referral to, or provide, diagnostic and treatment services.

- Family doctors
- Mental health specialists, such as psychiatrists, psychologists, social workers, or mental health counselors
- Health maintenance organizations
- Community mental health centers
- Hospital psychiatry departments and outpatient clinics
- University- or medical school-affiliated programs
- State hospital outpatient clinics
- Family service, social agencies, or clergy
- Private clinics and facilities
- Employee assistance programs
- Local medical and/or psychiatric societies

FURTHER INFORMATION

Please visit the following link for more information about organizations that focus on depression:

- http://www.nimh.nih.gov/HealthInformation/ResourceList.cfm?Flowstate=4&DisOrdID=6

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Child and Adolescent Bipolar Disorder: An Update from the National Institute of Mental Health

Research findings, clinical experience, and family accounts provide substantial evidence that bipolar disorder, also called manic-depressive illness, can occur in children and adolescents. Bipolar disorder is difficult to recognize and diagnose in youth, however, because it does not fit precisely the symptom criteria established for adults, and because its symptoms can resemble or co-occur with those of other common childhood-onset mental disorders. In addition, symptoms of bipolar disorder may be initially mistaken for normal emotions and behaviors of children and adolescents. But unlike normal mood changes, bipolar disorder significantly impairs functioning in school, with peers, and at home with family. Better understanding of the diagnosis and treatment of bipolar disorder in youth is urgently needed. In pursuit of this goal, the National Institute of Mental Health (NIMH) is conducting and supporting research on child and adolescent bipolar disorder.

Symptoms and Diagnosis

Bipolar disorder is a serious mental illness characterized by recurrent episodes of depression, mania, and/or mixed symptom states. These episodes cause unusual and extreme shifts in mood, energy, and behavior that interfere significantly with normal, healthy functioning.

Manic symptoms include:

- Severe changes in mood, either extremely irritable or overly silly and elated
- Overly-inflated self-esteem; grandiosity
- Increased energy
- Decreased need for sleep, ability to go with very little or no sleep for days without tiring
- Increased talking, talks too much, too fast; changes topics too quickly; cannot be interrupted
- Distractibility, attention moves constantly from one thing to the next

A Cautionary Note

Effective treatment depends on appropriate diagnosis of bipolar disorder in children and adolescents. There is some evidence that using antidepressant medication to treat depression in a person who has bipolar disorder may induce manic symptoms if it is taken without a mood stabilizer.

In addition, using stimulant medications to treat attention deficit hyperactivity disorder (ADHD) or ADHD-like symptoms in a child with bipolar disorder may worsen manic symptoms. While it can be hard to determine which young patients will become manic, there is a greater likelihood among children and adolescents who have a family history of bipolar disorder.

If manic symptoms develop or markedly worsen during antidepressant or stimulant use, a physician should be consulted immediately, and diagnosis and treatment for bipolar disorder should be considered.

- **Hypersexuality, increased sexual thoughts, feelings, or behaviors; use of explicit sexual language**
- **Increased goal-directed activity or physical agitation**
- **Disregard of risk, excessive involvement in risky behaviors or activities**

Depressive symptoms include:

- **Persistent sad or irritable mood**
- **Loss of interest in activities once enjoyed**
- **Significant change in appetite or body weight**
- **Difficulty sleeping or oversleeping**
- **Physical agitation or slowing**
- **Loss of energy**
- **Feelings of worthlessness or inappropriate guilt**
- **Difficulty concentrating**
- **Recurrent thoughts of death or suicide**

Symptoms of mania and depression in children and adolescents may manifest themselves through a variety of different behaviors.[1,2] When manic, children and adolescents, in contrast to adults, are more likely to be irritable and prone to destructive outbursts than to be elated or euphoric. When depressed, there may be many physical complaints such as headaches, muscle aches, stomachaches or tiredness, frequent absences from school or poor performance in school, talk of or efforts to run away from home, irritability, complaining, unexplained crying, social isolation, poor communication, and extreme sensitivity to rejection or failure. Other manifestations of manic and depressive states may include alcohol or substance abuse and difficulty with relationships.

Existing evidence indicates that bipolar disorder beginning in childhood or early adolescence may be a different, possibly more severe form of the illness than older adolescent- and adult-onset bipolar disorder.[1,2] When the illness begins before or soon after puberty, it is often characterized by a continuous, rapid-cycling, irritable, and mixed symptom state that may co-occur with disruptive behavior disorders, particularly attention deficit hyperactivity disorder (ADHD) or conduct disorder (CD), or may have features of these disorders as initial symptoms. In contrast, later adolescent- or adult-onset bipolar disorder tends to begin suddenly, often with a classic manic episode, and to have a more episodic pattern with relatively stable periods between episodes. There is also less co-occurring ADHD or CD among those with later onset illness.

A child or adolescent who appears to be depressed and exhibits ADHD-like symptoms that are very severe, with excessive temper outbursts and mood changes, should be evaluated by a psychiatrist or psychologist with experience in bipolar disorder, particularly if there is a family history of the illness. This evaluation is especially important since psychostimulant medications, often prescribed for ADHD, may worsen manic symptoms. There is also limited evidence suggesting that some of the symptoms of ADHD may be a forerunner of full-blown mania.

Findings from an NIMH-supported study suggest that the illness may be at least as common among youth as among adults. In this study, one percent of adolescents ages 14 to 18 were found to have met criteria for bipolar disorder or cyclothymia, a similar but milder illness, in their lifetime.[3] In addition, close to six percent of adolescents in the study had experienced a distinct period of abnormally and persistently elevated, expansive, or irritable mood even though they never met full criteria for bipolar disorder or cyclothymia. Compared to adolescents with a history of major depressive disorder and to a never-mentally-ill group, both the teens with bipolar disorder and those with subclinical symptoms had greater functional impairment and higher rates of co-occurring illnesses (especially anxiety and disruptive behavior disorders), suicide attempts, and mental health services utilization. The study highlights the need for improved recognition, treatment, and prevention of even the milder and subclinical cases of bipolar disorder in adolescence.

Treatment

Once the diagnosis of bipolar disorder is made, the treatment of children and adolescents is based mainly on experience with adults, since as yet there is very limited data on the efficacy and safety of mood stabilizing medications in youth.[4] The essential treatment for this disorder in adults involves the use of appropriate doses of mood stabilizers, most typically lithium and/or valproate, which are often very effective for controlling mania and preventing recurrences of manic and depressive episodes. Research on the effectiveness of these and other medications in children and adolescents with bipolar disorder is ongoing. In addition, studies are investigating various forms of psychotherapy, including cognitive-behavioral therapy, to complement medication treatment for this illness in young people.

NIMH is attempting to fill the current gaps in treatment knowledge with carefully designed studies involving children and adolescents with bipolar disorder. Data

Valproate Use

According to studies conducted in Finland in patients with epilepsy, valproate may increase testosterone levels in teenage girls and produce polycystic ovary syndrome in women who began taking the medication before age 20.[5] Increased testosterone can lead to polycystic ovary syndrome with irregular or absent menses, obesity, and abnormal growth of hair. Therefore, young female patients taking valproate should be monitored carefully by a physician.

from adults do not necessarily apply to younger patients, because the differences in development may have implications for treatment efficacy and safety.[4] Current multi-state studies funded by NIMH are investigating the value of long-term treatment with lithium and other mood stabilizers in preventing recurrence of bipolar disorder in adolescents. Specifically, these studies aim to determine how well lithium and other mood stabilizers prevent recurrences of mania or depression and control subclinical symptoms in adolescents; to identify factors that predict outcome; and to assess side effects and overall adherence to treatment. Another NIMH-funded study is evaluating the safety and efficacy of valproate for treatment of acute mania in children and adolescents, and also is investigating the biological correlates of treatment response. Other NIMH-supported investigators are studying the effects of antidepressant medications added to mood stabilizers in the treatment of the depressive phase of bipolar disorder in adolescents.

For more information

Visit the following link for more information on NIMH.

- http://www.nimh.nih.gov/about/nimh.cfm

Please visit the following links for more information about organizations that focus on child and adolescent mental health and bipolar disorder.

- http://www.nimh.nih.gov/HealthInformation/ResourceList.cfm?Flowstate=4&DisOrdID=23

- http://www.nimh.nih.gov/HealthInformation/ResourceList.cfm?Flowstate=4&DisOrdID=4

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Facts About Anxiety Disorders

Most people experience feelings of anxiety before an important event such as a big exam, business presentation, or first date. Anxiety disorders, however, are illnesses that fill people's lives with overwhelming anxiety and fear that are chronic, unremitting, and can grow progressively worse. Tormented by panic attacks, obsessive thoughts, flashbacks of traumatic events, nightmares, or countless frightening physical symptoms, some people with anxiety disorders even become housebound. Fortunately, through research supported by the National Institute of Mental Health (NIMH), there are effective treatments that can help.

How Common Are Anxiety Disorders?

Anxiety disorders, as a group, are the most common mental illness in America. More than 19 million American adults are affected by these debilitating illnesses each year. Children and adolescents can also develop anxiety disorders.

What Are the Different Kinds of Anxiety Disorders?

- **Panic Disorder**—Repeated episodes of intense fear that strike often and without warning. Physical symptoms include chest pain, heart palpitations, shortness of breath, dizziness, abdominal distress, feelings of unreality, and fear of dying.
- **Obsessive-Compulsive Disorder**—Repeated, unwanted thoughts or compulsive behaviors that seem impossible to stop or control.
- **Post-Traumatic Stress Disorder**—Persistent symptoms that occur after experiencing or witnessing a traumatic event such as rape or other criminal assault, war, child abuse, natural or human-caused disasters, or crashes. Nightmares, flashbacks, numbing of emotions, depression, and feeling angry, irritable or distracted and being easily startled are common. Family members of victims can also develop this disorder.
- **Phobias**—Two major types of phobias are social phobia and specific phobia. People with social phobia have an overwhelming and disabling fear of scrutiny, embarrassment, or humiliation in social situations, which leads to avoidance of many potentially pleasurable and meaningful activities. People with specific phobia experience extreme, disabling, and irrational fear of something that poses little or no

Anxiety Disorders
One-Year Prevalence (Adults)

	%	*
Any Anxiety Disorder	13.3	19.1
Panic Disorder	1.7	2.4
Obsessive-Compulsive Disorder	2.3	3.3
Post-Traumatic Stress Disorder	3.6	5.2
Any Phobia	8.0	11.5
Generalized Anxiety Disorder	2.8	4.0

* **Population Estimate (Millions)**
Based on 7/1/98 U.S. Census resident population estimate of 143.3 million, age 18-54

actual danger; the fear leads to avoidance of objects or situations and can cause people to limit their lives unnecessarily.

- **Generalized Anxiety Disorder**—Constant, exaggerated worrisome thoughts and tension about everyday routine life events and activities, lasting at least six months. Almost always anticipating the worst even though there is little reason to expect it; accompanied by physical symptoms, such as fatigue, trembling, muscle tension, headache, or nausea.

What Are Effective Treatments for Anxiety Disorders?

Treatments have been largely developed through research conducted by NIMH and other research institutions. They help many people with anxiety disorders and often combine medication and specific types of psychotherapy.

A number of medications that were originally approved for treating depression have been found to be effective for anxiety disorders as well. Some of the newest of these antidepressants are called selective serotonin reuptake inhibitors (SSRIs). Other antianxiety medications include groups of drugs called benzodiazepines and beta-blockers. If one medication is not effective, others can be tried. New medications are currently under development to treat anxiety symptoms.

Two clinically-proven effective forms of psychotherapy used to treat anxiety disorders are behavioral therapy and cognitive-behavioral therapy. Behavioral therapy focuses on changing specific actions and uses several techniques to stop unwanted behaviors. In addition to the behavioral therapy techniques, cognitive-behavioral therapy teaches patients to understand and change their thinking patterns so they can react differently to the situations that cause them anxiety.

Do Anxiety Disorders Co-Exist with Other Physical or Mental Disorders?

It is common for an anxiety disorder to accompany depression, eating disorders, substance abuse, or another anxiety disorder. Anxiety disorders can also co-exist with illnesses such as cancer or heart disease. In such instances, the accompanying disorders will also need to be treated. Before beginning any treatment, however, it is important to have a thorough medical examination to rule out other possible causes of symptoms.

For more information

Please visit the following link for more information about organizations that focus on anxiety disorders.

- http://www.nimh.nih.gov/HealthInformation/ResourceList.cfm?Flowstate=4&DisOrdID=2

QUIZ

How Much Do You Know About Anxiety Disorders?

Fear and anxiety are a necessary part of life. Whether it's a feeling of anxiety before taking a test or a feeling of fear as you walk down a dark street, normal anxiety can be protective and stimulating. Unfortunately, more than 19 million Americans with anxiety disorders face much more than just "normal" anxiety. Instead, their lives are filled with overwhelming anxiety and fear that can be intense and crippling. Although anxiety disorders can be disabling, research supported and conducted by the National Institute of Mental Health (NIMH) has provided insight into their causes and has resulted in many effective treatments.

1. Which of the following are disorders of the brain?

a. Stroke, epilepsy, multiple sclerosis
b. Anxiety disorders, schizophrenia, depression, alcohol addiction
c. Autism, anorexia, learning disabilities, dyslexia, migraines
d. Alzheimer's disease, Tourette syndrome, Parkinson's disease, brain tumor
e. All of the above

2. True or False?
Post-traumatic stress disorder, once referred to as shell shock or battle fatigue, is a condition that only affects war veterans.

3. True or False?
Someone who feels compelled to spend a great deal of time doing things over and over again such as washing their hands, checking things, or counting things has an anxiety disorder.

4. What is the most common mental health problem in the United States?

a. Depression
b. Schizophrenia
c. Anxiety disorders

5. Which of the following diseases/disorders are real medical illnesses?

e. Anxiety disorders
f. Diabetes
g. High blood pressure
h. All of the above

6. Which of the following are symptoms of an anxiety disorder known as panic disorder?

a. Chest pains
b. Dizziness
c. Nausea or stomach problems
d. Fear of dying
e. All of the above

7. True or False?
Anxiety disorders often occur with other illnesses.

8. True or False?
Most people successfully take control of the symptoms of anxiety disorders by sheer willpower and personal strength.

ANSWERS TO QUIZ

1. Which of the following are disorders of the brain?

Answer: **e. All of the above.**

Brain research demonstrates that disorders as different as stroke, anxiety disorders, alcohol addiction, anorexia, learning disabilities, and Alzheimer's disease all have their roots in the brain. Every American will be affected at some point in his or her life, either personally or by a family member's struggle, with a brain disorder.

2. Post-traumatic stress disorder, once referred to as shell shock or battle fatigue, is a condition that only affects war veterans.

Answer: **False.**

Individuals who have experienced or witnessed a traumatic event or ordeal, such as a terrorist attack, a tornado, a rape or mugging, or a car accident, can be at risk for developing post-traumatic stress disorder (PTSD). Many people with this anxiety disorder repeatedly relive the trauma in the form of nightmares and disturbing recollections during the day. They may also experience sleep problems, depression, feeling detached or numb, or being easily startled.

3. Someone who feels compelled to spend a great deal of time doing things over and over again such as washing their hands, checking things, or counting things has an anxiety disorder.

Answer: **True.**

A person plagued by the urgent need to engage in certain rituals, or tormented by unwelcome thoughts or images, may be suffering from an anxiety disorder called obsessive-compulsive disorder (OCD). Most healthy people can identify with having some of the symptoms of OCD, such as checking the stove several times before leaving the house. But the disorder is diagnosed only when such activities consume at least an hour a day, are very distressing, and interfere with daily life. OCD affects men and women equally. It can appear in childhood, adolescence, or adulthood, but on the average, it first shows up in the teens or early adulthood.

4. What is the most common mental health problem in the United States?

Answer: **c. Anxiety disorders.**

Anxiety disorders are the most common mental health problem in America. More than 19 million Americans suffer from anxiety disorders, which include panic disorder, obsessive-compulsive disorder, post-traumatic stress disorder, phobias, and generalized anxiety disorder.

5. Which of the following diseases/disorders are real medical illnesses?

Answer: **d. All of the above.**

Anxiety disorders, diabetes, and high blood pressure are all real medical illnesses. Brain scientists have shown that anxiety disorders are often related to the biological makeup and life experiences of the individual, and they frequently run in families. Unfortunately, misconceptions about mental illnesses like anxiety disorders still exist. Because many people believe mental illness is a sign of personal weakness, the condition is often trivialized and is left untreated. The good news is that effective treatments are available for anxiety disorders.

6. Which of the following are symptoms of an anxiety disorder known as panic disorder?

Answer: **e. All of the above.**

Panic disorder is characterized by unexpected and repeated episodes of intense fear accompanied by physical symptoms that may include chest pain, heart palpitations, shortness of breath, dizziness, or abdominal distress. These sensations often mimic symptoms of a heart attack or other life-threatening medical conditions. Left untreated, people with panic disorder can develop so many phobias about places or situations where panic attacks have occurred that they become housebound.

7. Anxiety disorders often occur with other illnesses.

Answer: **True.**

It is common for an anxiety disorder to accompany depression, eating disorders, substance abuse, or another anxiety disorder. Anxiety disorders can also co-exist with illnesses such as heart disease, high blood pressure, irritable bowel syndrome, thyroid conditions, and migraine headaches. In such instances, the accompanying disorders will also need to be treated. So, it is important, before beginning any treatment, to have a thorough medical examination to determine the causes of symptoms.

8. Most people successfully take control of the symptoms of anxiety disorders by sheer willpower and personal strength.

Answer: **False.**

Many people misunderstand anxiety disorders and other mental illnesses and think individuals should be able to overcome the symptoms by sheer willpower. Wishing the symptoms away does not work—but there are treatments that can help. Treatment for anxiety disorders often involves medication, specific forms of psychotherapy, or a combination of the two.

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Attention Deficit Hyperactivity Disorder

In recent years, attention deficit hyperactivity disorder (ADHD) has been a subject of great public attention and concern. Children with ADHD—one of the most common of the psychiatric disorders that appear in childhood—can't stay focused on a task, can't sit still, act without thinking, and rarely finish anything. If untreated, the disorder can have long-term effects on a child's ability to make friends or do well at school or work. Over time, children with ADHD may develop depression, poor self-esteem, and other emotional problems.

- ADHD affects an estimated 4.1 percent of youths ages 9 to 17 in a 6-month period.[1]
- About 2 to 3 times more boys than girls have ADHD.[2]
- Children with untreated ADHD have higher than normal rates of injury.[3]
- ADHD often co-occurs with other problems, such as depressive and anxiety disorders, conduct disorder, drug abuse, or antisocial behavior.[4,5]
- Symptoms of ADHD usually become evident in preschool or early elementary years. The disorder frequently persists into adolescence and occasionally into adulthood.[6]

Diagnosis and Treatment

Effective treatment depends on appropriate diagnosis of ADHD. A comprehensive medical evaluation of the child must be conducted to establish a correct diagnosis of ADHD and to rule out other potential causes of the symptoms. ADHD can be reliably diagnosed when appropriate guidelines are used.[7,8] Ideally, a health care practitioner making a diagnosis should include input from both parents and teachers. But some health practitioners diagnose ADHD without all this information and tend to either overdiagnose the disorder or underdiagnose it.

Research has shown that certain medications, stimulants in most cases, and behavioral therapies that help children with ADHD control their activity level and impulsiveness, pay attention, and focus on tasks are the most beneficial treatments.[9] Stimulants commonly prescribed for ADHD include methylphenidate (Ritalin®), dextroamphetamine (Dexedrine®), and amphetamine (Adderall®). Despite data showing that stimulant medications are safe,[8] there are widespread misunderstandings about the safety and use of these drugs, and some health care practitioners are reluctant to prescribe them. Like

all medications, those used to treat ADHD do have side effects and need to be closely monitored.

Problems Faced by Families

Parents need to carefully evaluate treatment choices when their child receives a diagnosis of ADHD. When they pursue treatment for their children, families face high out-of-pocket expenses because treatment for ADHD and other mental illnesses is often not covered by insurance policies. In schools, treatment plans are often poorly integrated. In addition, there are few special education funds directed specifically for ADHD. All of these factors lead to children who do not receive proper and adequate treatment. To overcome these barriers, parents may want to look for school-based programs that have a team approach involving parents, teachers, school psychologists, other mental health specialists, and physicians.

Research Findings

Brain imaging research using a technique called magnetic resonance imaging (MRI) has shown that differences exist between the brains of children with and without ADHD.[10] In addition, there appears to be a link between a person's ability to pay continued attention and the use of glucose—the body's major fuel—in the brain. In adults with ADHD, the brain areas that control attention use less glucose and appear to be less active, suggesting that a lower level of activity in some parts of the brain may cause inattention.[11]

Research shows that ADHD tends to run in families, so there are likely to be genetic influences.[12] Children who have ADHD usually have at least one close relative who also has ADHD. And at least one-third of all fathers who had ADHD in their youth have children with ADHD. Even more convincing of a possible genetic link is that when one twin of an identical twin pair has the disorder, the other is likely to have it too.

Data from 1995 show that physicians treating children and adolescents wrote 6 million prescriptions for stimulants.[13] Of all the drugs used to treat psychiatric disorders in children, stimulant medications are the most well studied. A 1998 Consensus Development Conference on ADHD sponsored by the National Institutes of Health and a recent, comprehensive scientific report confirmed many earlier studies showing that short-term use of stimulants is safe and effective for children with ADHD.[8, 14]

In December 1999, NIMH released the results of a study of nearly 600 elementary school children, ages 7 to 9, which evaluated the safety and relative effectiveness of the leading treatments for ADHD for a period up to 14 months.[9] The results indicate that the use of stimulants alone is more effective than

behavioral therapies in controlling the core symptoms of ADHD—inattention, hyperactivity/impulsiveness, and aggression. In other areas of functioning, such as anxiety symptoms, academic performance, and social skills, the combination of stimulant use with intensive behavioral therapies was consistently more effective. (Of note, families and teachers reported somewhat higher levels of satisfaction for those treatments that included the behavioral therapy components.) NIMH researchers will continue to track these children into adolescence to evaluate the long-term outcomes of these treatments, and ongoing reports will be published.

For More Information

Please visit the following link for more information about organizations that focus on attention deficit hyperactivity disorder.

- http://www.nimh.nih.gov/HealthInformation/ResourceList.cfm?Flowstate=4&DisOrdID=14

NIH Publication No. 01-4589

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Childhood-Onset Schizophrenia: An Update from the National Institute of Mental Health

A child's stage of development must be taken into account when considering a diagnosis of mental illness.[1] Behaviors that are normal at one age may not be at another. Rarely, a healthy young child may report strange experiences—such as hearing voices—that would be considered abnormal at a later age. Clinicians look for a more persistent pattern of such behaviors. Parents may have reason for concern if a child of 7 years or older often hears voices saying derogatory things about him or her, or voices conversing with one another, talks to himself or herself, stares at scary things—snakes, spiders, shadows—that are not really there, and shows no interest in friendships. Such behaviors could be signs of schizophrenia, a chronic and disabling form of mental illness.[2]

Fortunately, schizophrenia is rare in children, affecting only about 1 in 40,000,[3] compared to 1 in 100 in adults. The average age of onset is 18 in men and 25 in women. Ranking among the top 10 causes of disability worldwide,[4] schizophrenia, at any age, exacts a heavy toll on patients and their families. Children with schizophrenia experience difficulty in managing everyday life. They share with their adult counterparts psychotic symptoms (hallucinations, delusions), social withdrawal, flattened emotions, increased risk of suicide and loss of social and personal care skills. They may also share some symptoms with—and be mistaken for—children who suffer from autism or other pervasive developmental disabilities, which affect about 1 in 500 children. Although they tend to be harder to treat and have a worse prognosis than adult-onset schizophrenia patients, researchers are finding that many children with schizophrenia can be helped by the new generation of antipsychotic medications.[5]

Symptoms and Diagnosis

While schizophrenia sometimes begins as an acute psychotic episode in young adults, it emerges gradually in children, often preceded by developmental disturbances, such as lags in motor and speech/language development. Such problems tend to be associated with more pronounced brain abnormalities. The diagnostic criteria are the same as for adults, except that symptoms appear prior to age 12, instead of in the late teens or early 20s.[6] Children with schizophrenia often see or hear things that do not really exist, and harbor paranoid and bizarre beliefs. For example, they may think people are plotting against them or can read their minds. Other symptoms of the disorder include problems paying attention, impaired memory and reasoning, speech impairments, inappropriate or flattened expression of emotion, poor social skills, and depressed mood. Such children may laugh at a sad event, make poor eye contact, and show little body language or facial expression.

Misdiagnosis of schizophrenia in children is all too common. It is distinguished from autism by the persistence of hallucinations and delusions for at least 6 months, and a later age of onset—7 years or older. Autism is usually diagnosed by age 3.[7] Schizophrenia is also distinguished from a type of brief psychosis sometimes seen in affective, personality, and dissociative disorders in children. Adolescents with bipolar disorder sometimes have acute onset of manic episodes that may be mistaken for schizophrenia. Children who have been victims of abuse may sometimes claim to hear voices of—or see visions of—the abuser. Symptoms of schizophrenia characteristically pervade the child's life, and are not limited to just certain situations, such as at school. If children show any interest in friendships, even if they fail at maintaining them, it is unlikely that they have schizophrenia.

Treatment

Treatments that help young patients manage their illness have improved significantly in recent decades. As in adults, antipsychotic medications are especially helpful in reducing hallucinations and delusions. The newer generation "atypical" antipsychotics, such as olanzapine and clozapine, may also help improve motivation and emotional expressiveness in some patients. They also have a lower likelihood of producing disorders of movement, including tardive dyskinesia, than the other antipsychotic drugs such as haloperidol. However, even with these newer medications, there are side effects, including excess weight gain that can increase risk of other health problems. The NIMH is conducting research studies to improve treatments (www.clinicaltrials.gov). Children with schizophrenia and their families can also benefit from supportive counseling, psychotherapies, and social skills training aimed at helping them cope with the illness. They likely require special education and/or other accommodations to succeed in the classroom.

Causes

Although it is unclear whether schizophrenia has a single or multiple underlying causes, evidence suggests that it is a neurodevelopmental disease likely involving a genetic predisposition, a prenatal insult to the developing brain, and stressful life events. The role of genetics has long been established; the risk of schizophrenia rises from 1 percent with no family history of the illness, to 10 percent if a first degree relative has it, to 50 percent if an identical twin has it. Prenatal insults may include viral infections, such as maternal influenza in the second trimester, starvation, lack of oxygen at birth, and untreated blood type incompatibility. Studies find that children share with adults many of the same abnormal brain structural, physiological, and neuropsychological features associated with schizophrenia.[6] The children seem to have more severe cases than adults, with more pronounced neurological abnormalities. This makes childhood-onset schizophrenia potentially one of the clearest windows available for research into a still obscure illness process.

For example, unlike most adult-onset patients, children who become psychotic prior to puberty show conspicuous evidence of progressively abnormal brain development. In the first longitudinal brain imaging study of adolescents,[8] magnetic resonance imaging (MRI) scans revealed fluid filled cavities in the middle of the brain enlarging abnormally between ages 14 and 18 in teens with early-onset schizophrenia, suggesting a shrinkage in brain tissue volume.[9] These children lost four times as much gray matter, neurons and their branchlike extensions, in their frontal lobes as normally occurs in teens. This gray matter loss engulfs the brain in a progressive wave from back to front over 5 years, beginning in rear structures involved in attention and perception, eventually spreading to frontal areas responsible for organizing, planning, and other "executive" functions impaired in schizophrenia.[10] Since losses in the rear areas are influenced mostly by environmental factors, the researchers suggest that some non-genetic trigger contributes to the onset and initial progression of the illness. The final loss pattern is consistent with that seen in adult schizophrenia. Adult-onset patients' brains may have undergone similar changes when they were teens that went unnoticed because symptoms had not yet emerged, suggest the researchers.

In addition to studies of brain structural abnormalities, researchers are also examining a group of measures associated with genetic risk for schizophrenia. Early-onset cases of illness have recently proven crucial in the discovery of genes linked to other genetically complex disorders like breast cancer, Alzheimer's, and Crohn's diseases.[3] Hence, children with schizophrenia and their families may play an important role in deciphering schizophrenia's molecular roots. Evidence suggests that the rate of genetically-linked abnormalities is twice as high in children as in adults with the illness. Similarly, schizophrenia spectrum disorders, thought to be genetically related to schizophrenia, are about twice as prevalent among first-degree relatives of childhood-onset patients. In one recent study, a third of the families of individuals with childhood onset schizophrenia had at least one first-degree relative with a diagnosis of schizophrenia, or schizotypal or paranoid personality disorder.[11] This profile of psychiatric illness is remarkably similar to that seen in parents of adult-onset patients, adding to the likelihood that both forms share common genetic roots. Other anomalies associated with adult schizophrenia, such as abnormal eye movements, are also more common in families of children with the illness.

Families of children with schizophrenia who are interested in participating in research are encouraged to fill out the NIMH Childhood-Onset Schizophrenia Survey, to help determine eligibility for studies.

For More Information

Please visit the following link for more information about organizations that focus on schizophrenia.

- http://www.nimh.nih.gov/HealthInformation/ResourceList.cfm?Flowstate=4&DisOrdID=11

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